

Figure 1

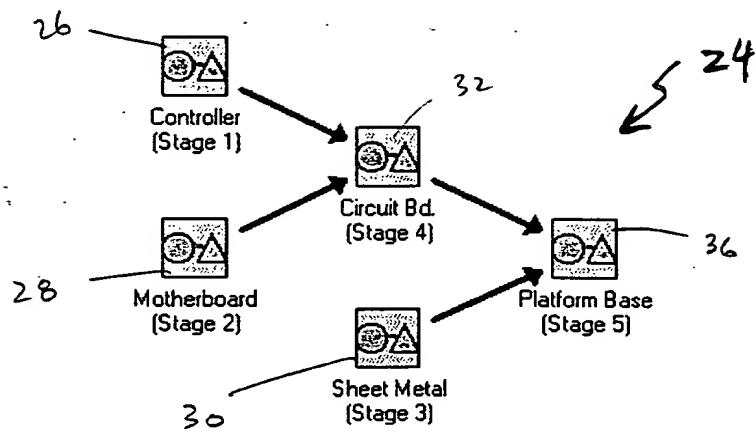


Fig. 2

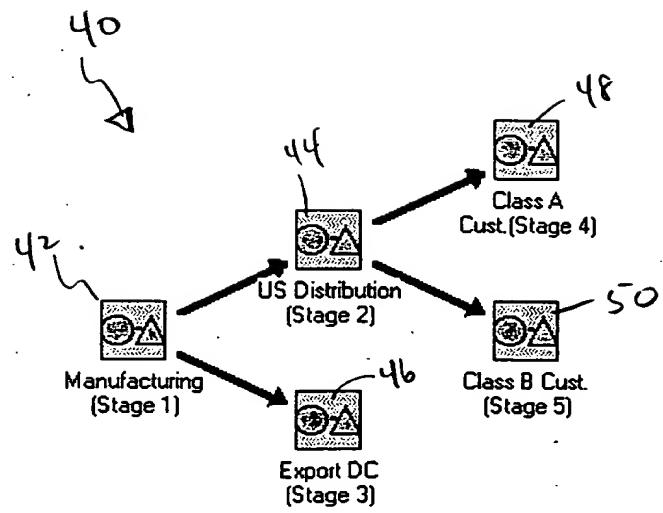


Fig. 3

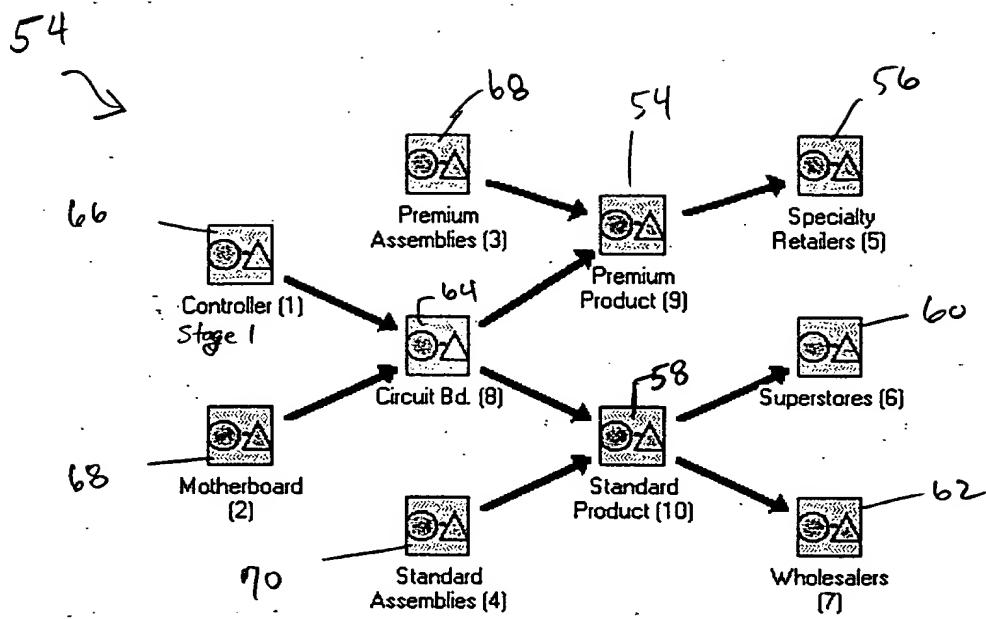


Fig. 4

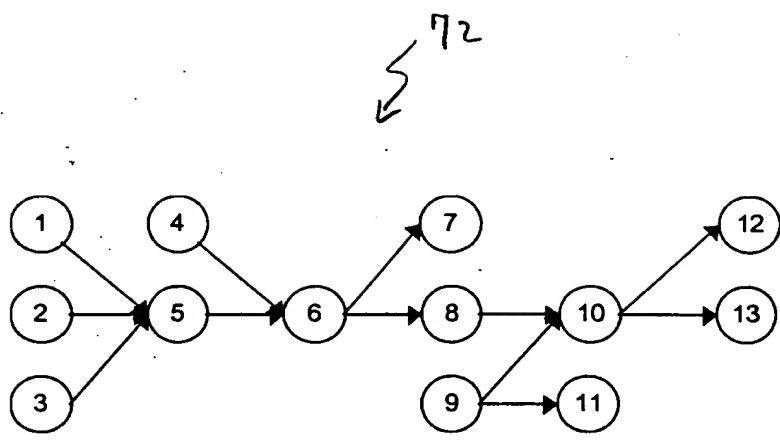


Fig. 5

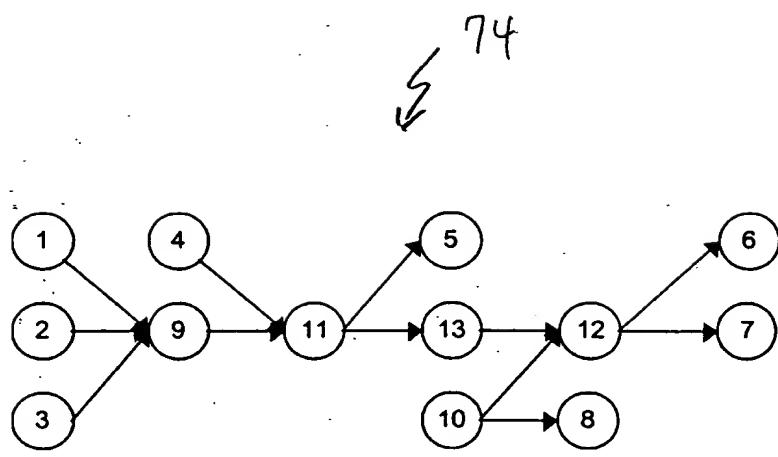


Figure 6

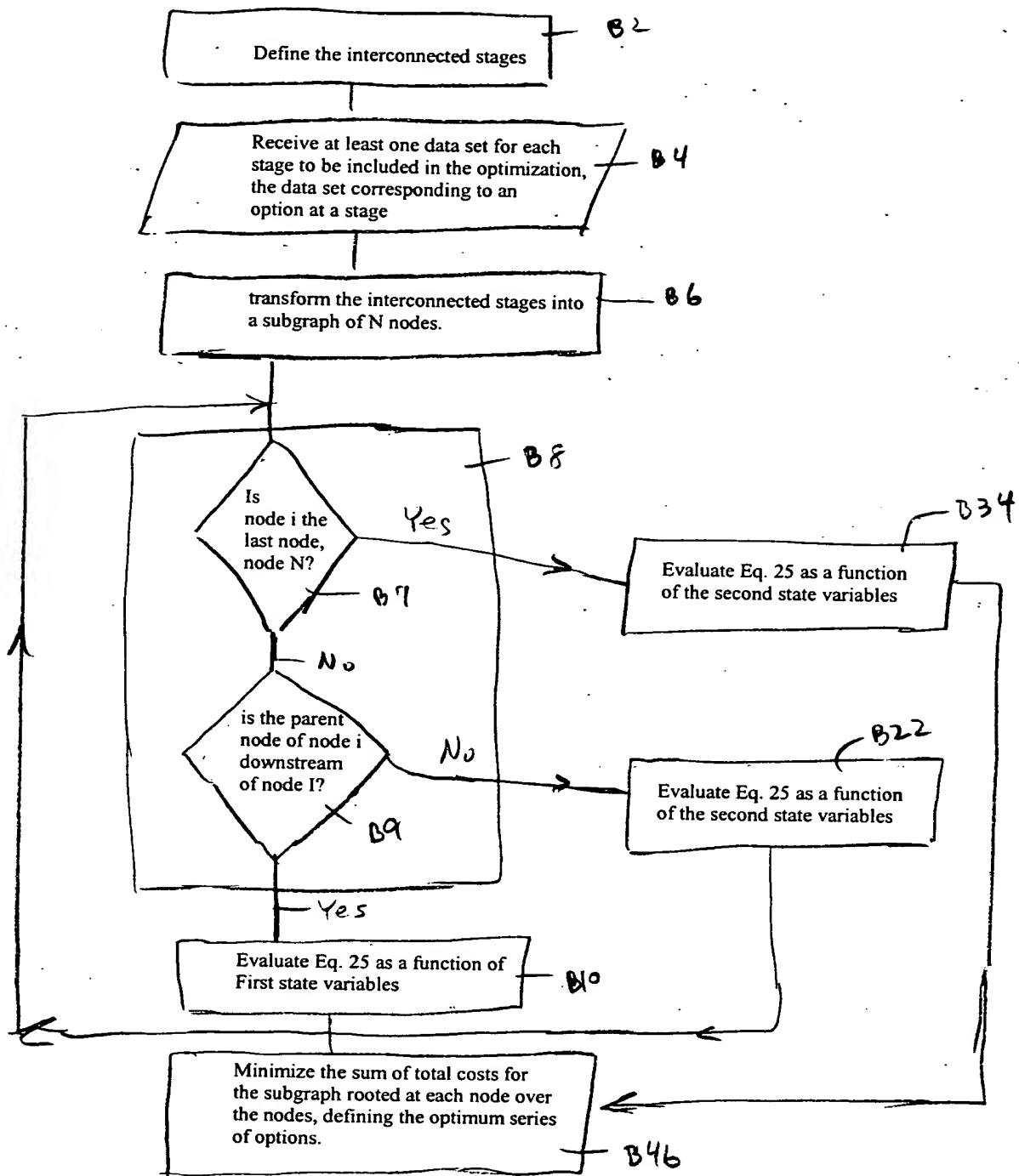


Fig. 7 a

B10

Evaluate the first term of Eq. 25 as a function of the first state variables is evaluated, defining first node i costs. More specifically, the summation of the total costs contributed by node i as a function of first state variables is determined.

B12

Evaluate the second term of Eq. 25 as a function of the first state variables, defining first upstream node i costs. More specifically, the summation of the total costs for the remainder of the system that is upstream of node i as a function of the first state variables are minimized.

B14

Evaluate the third term of Eq. 25 as a function of the first state variables. More specifically, the summation of total costs of the nodes that are downstream and adjacent of node i as a function of the first state variables are minimized, defining first downstream node i costs.

B16

Summing the first node i costs, first upstream node i costs, and first downstream node i costs to define first minimum total costs for the subgraph rooted at node i.

B18

Minimize the first minimum total costs for the subgraph rooted at node i over each option and over a first parameter, the first parameter being one of said first state variables.

B20

Go To B8

Fig. 7b

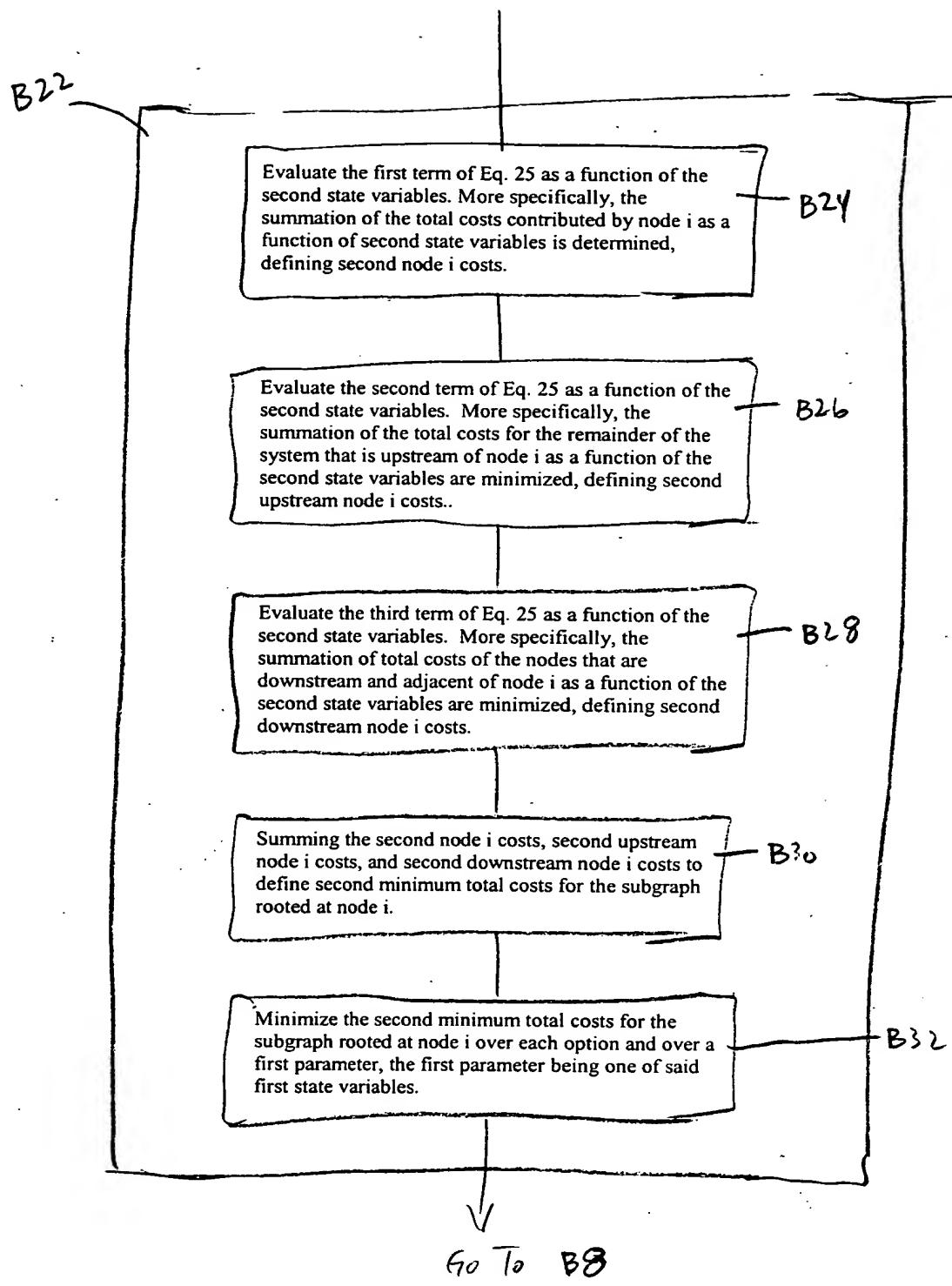


Fig. 7c

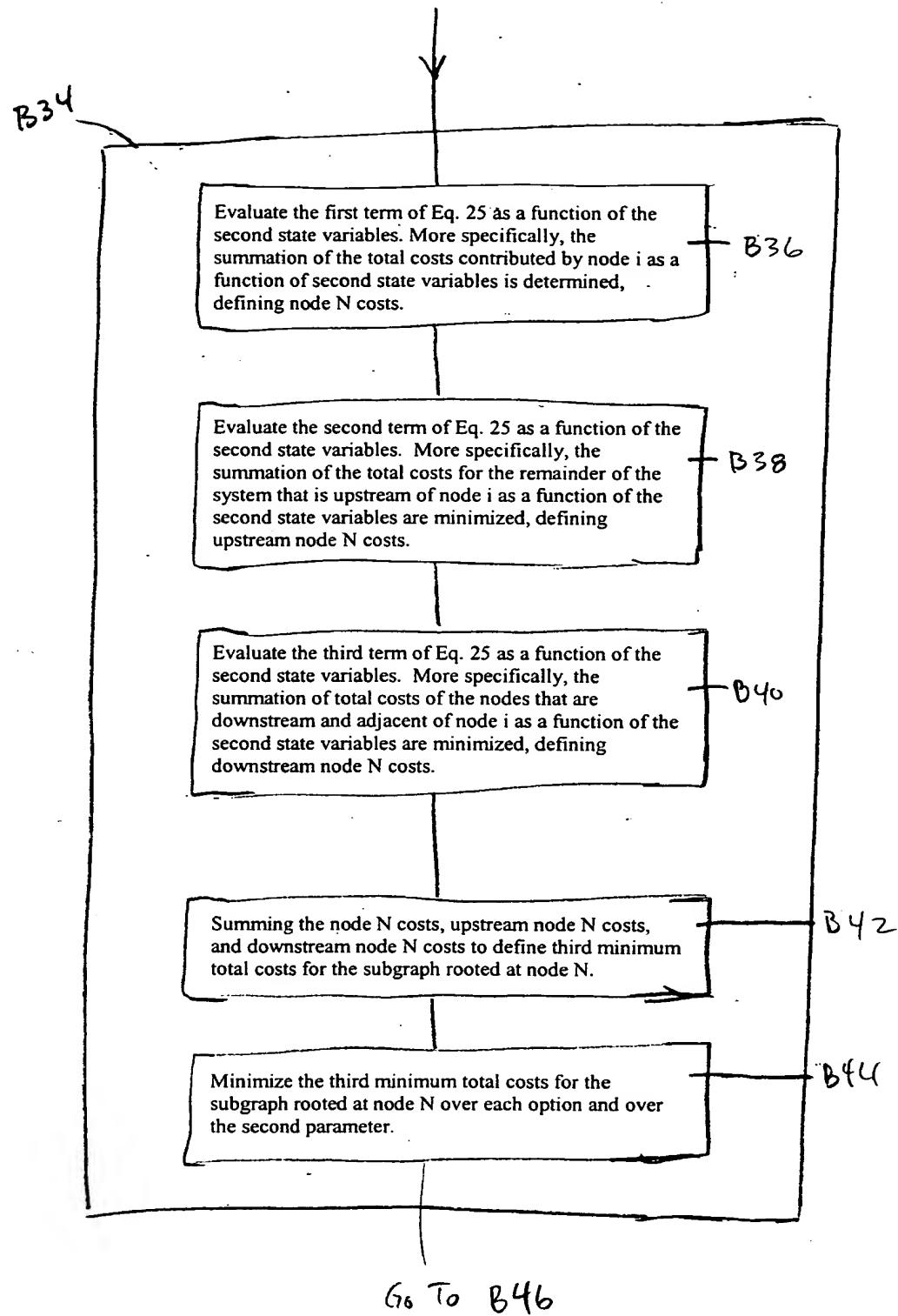


Fig. 7d

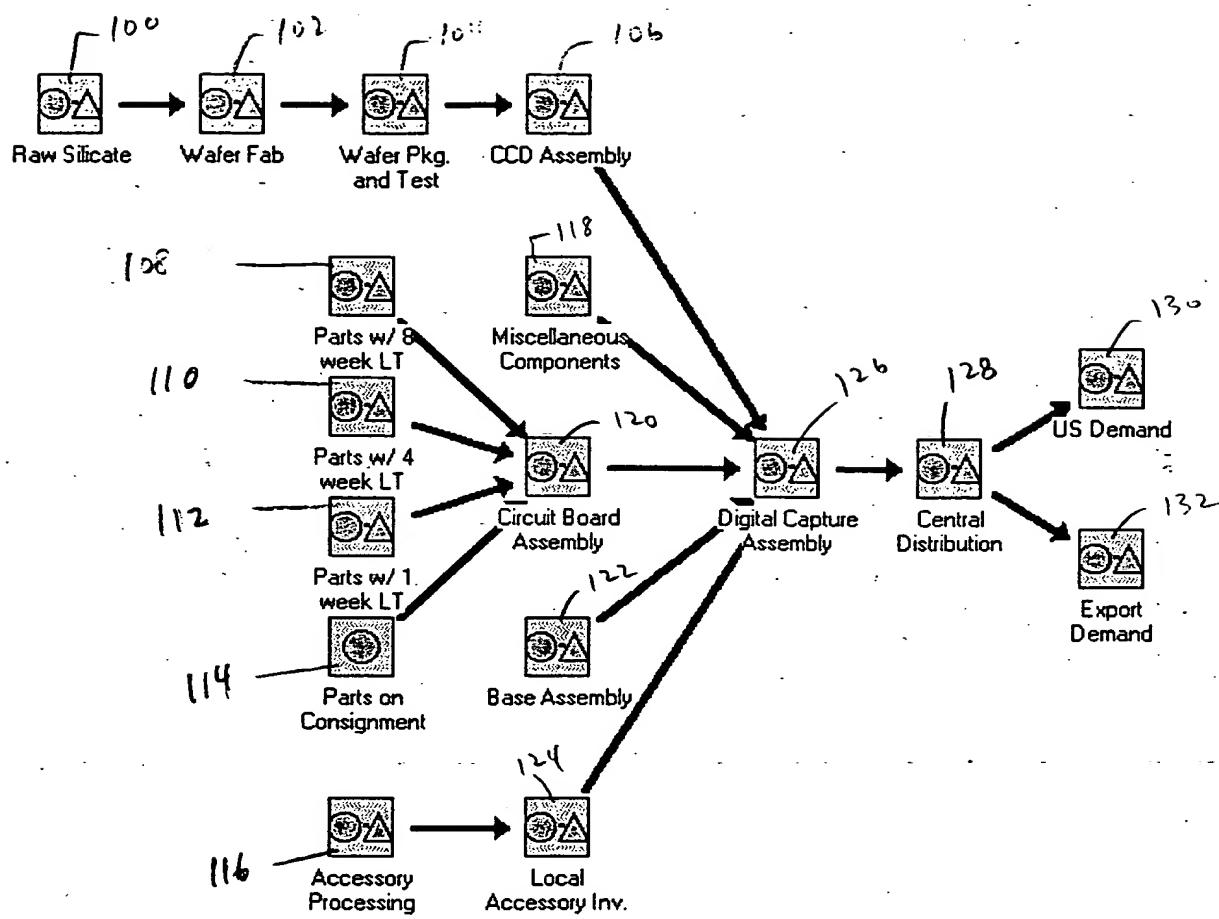


Fig. 8

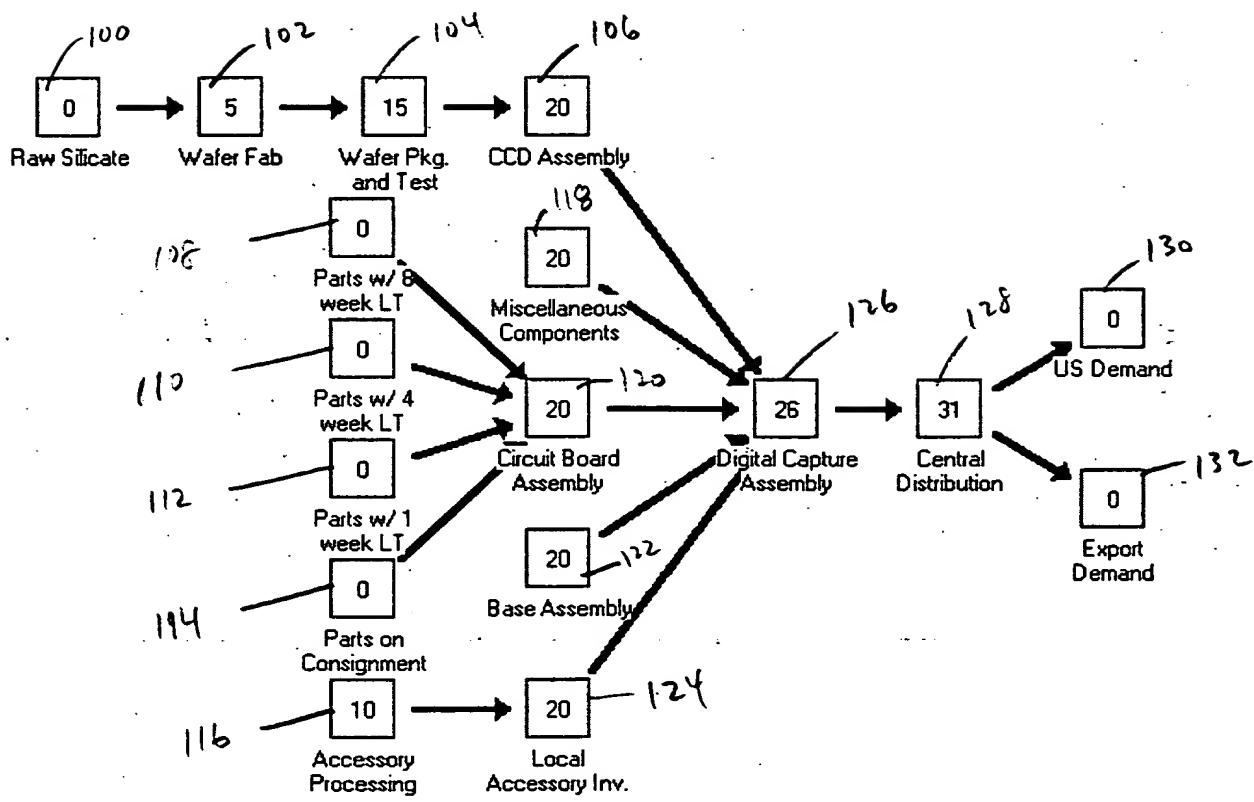


Fig. 9

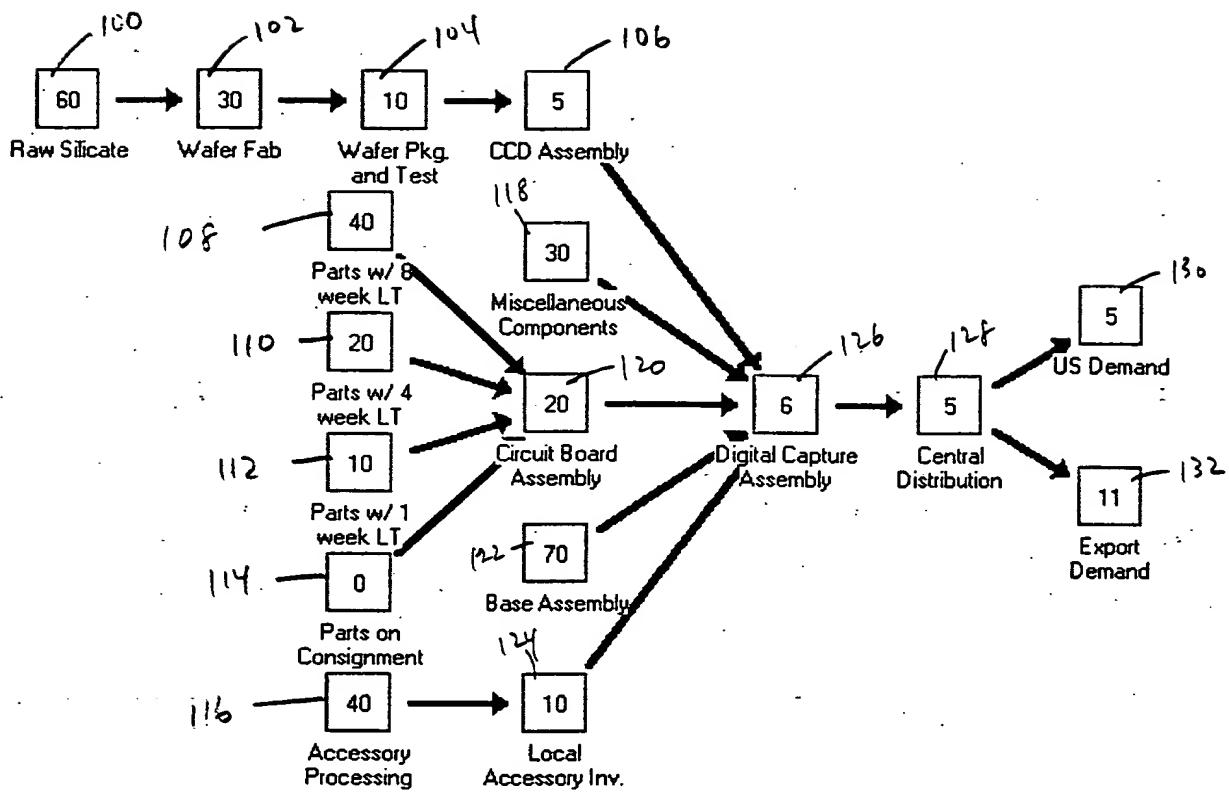


Fig. 10

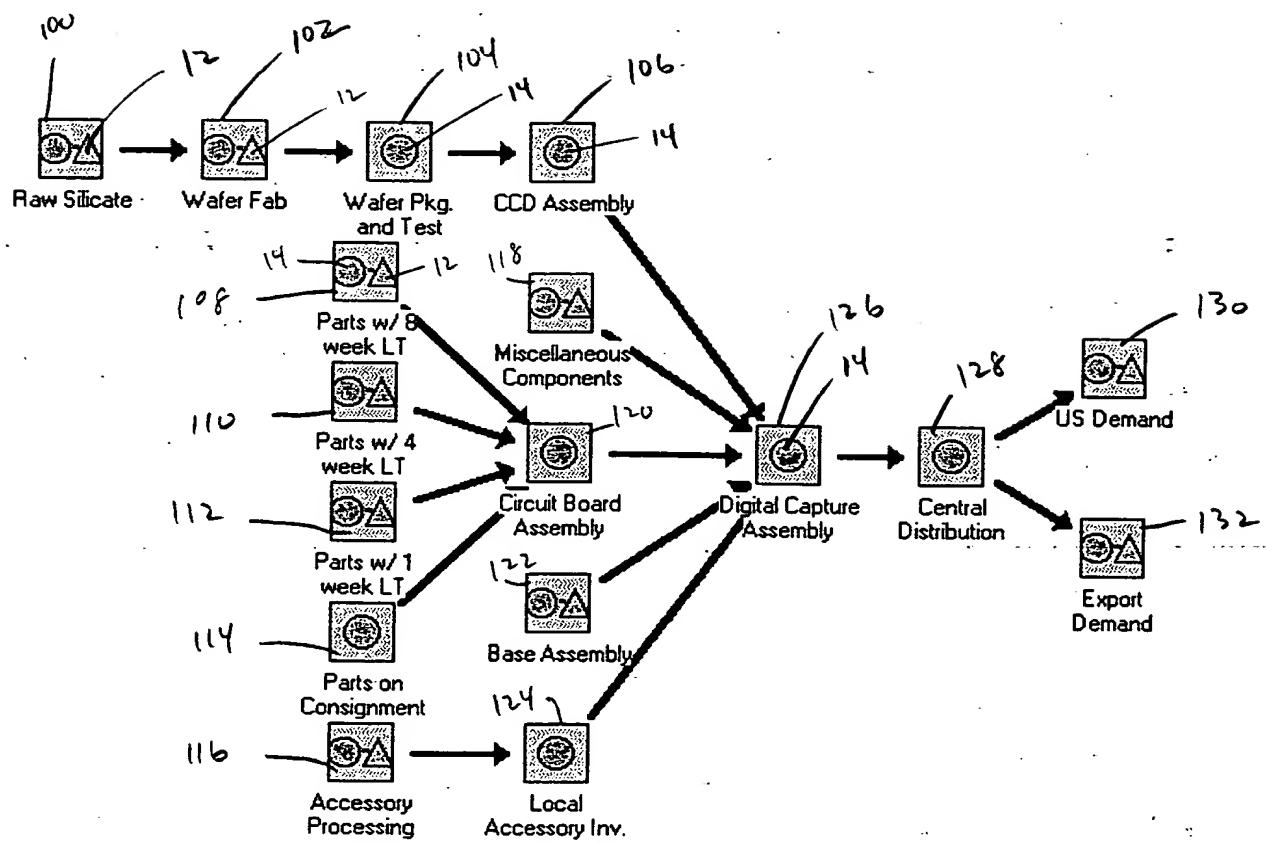


Fig. 11

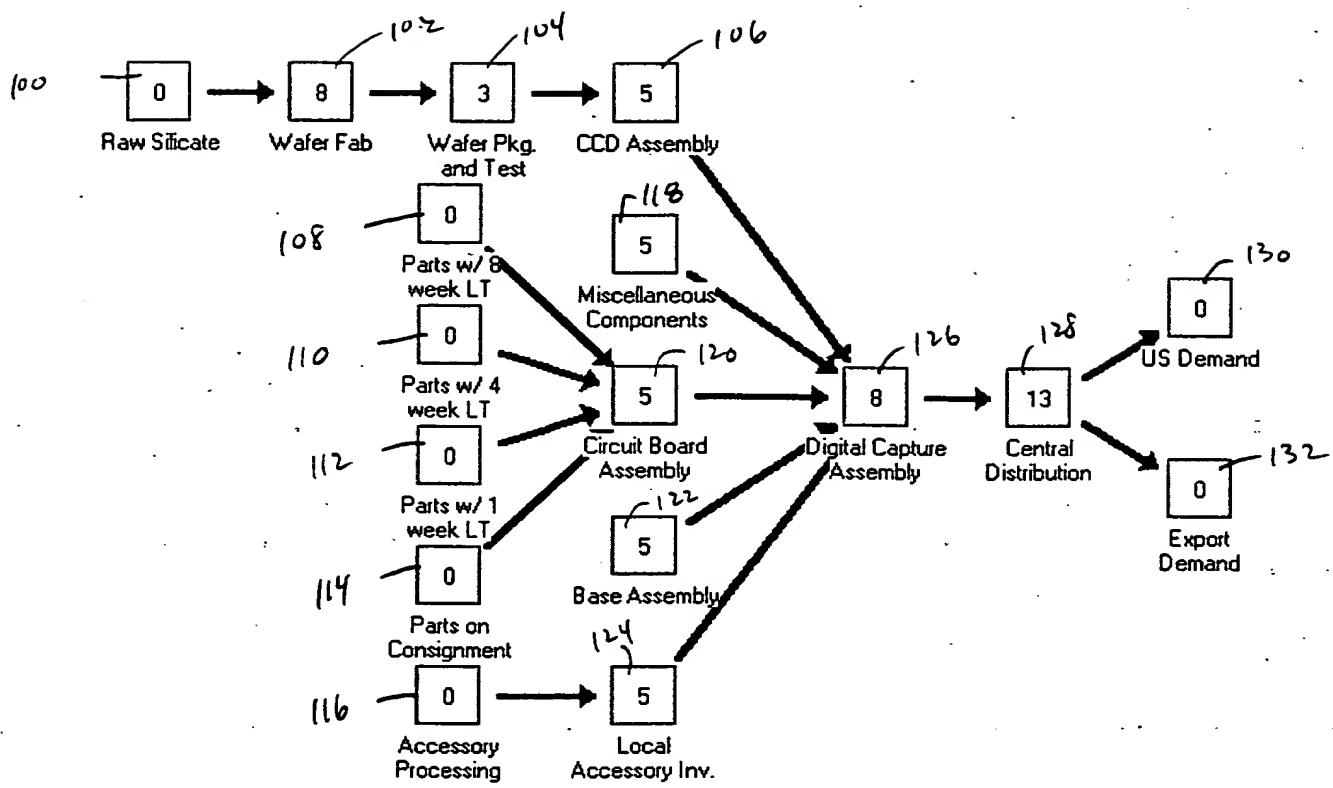


Fig. 12

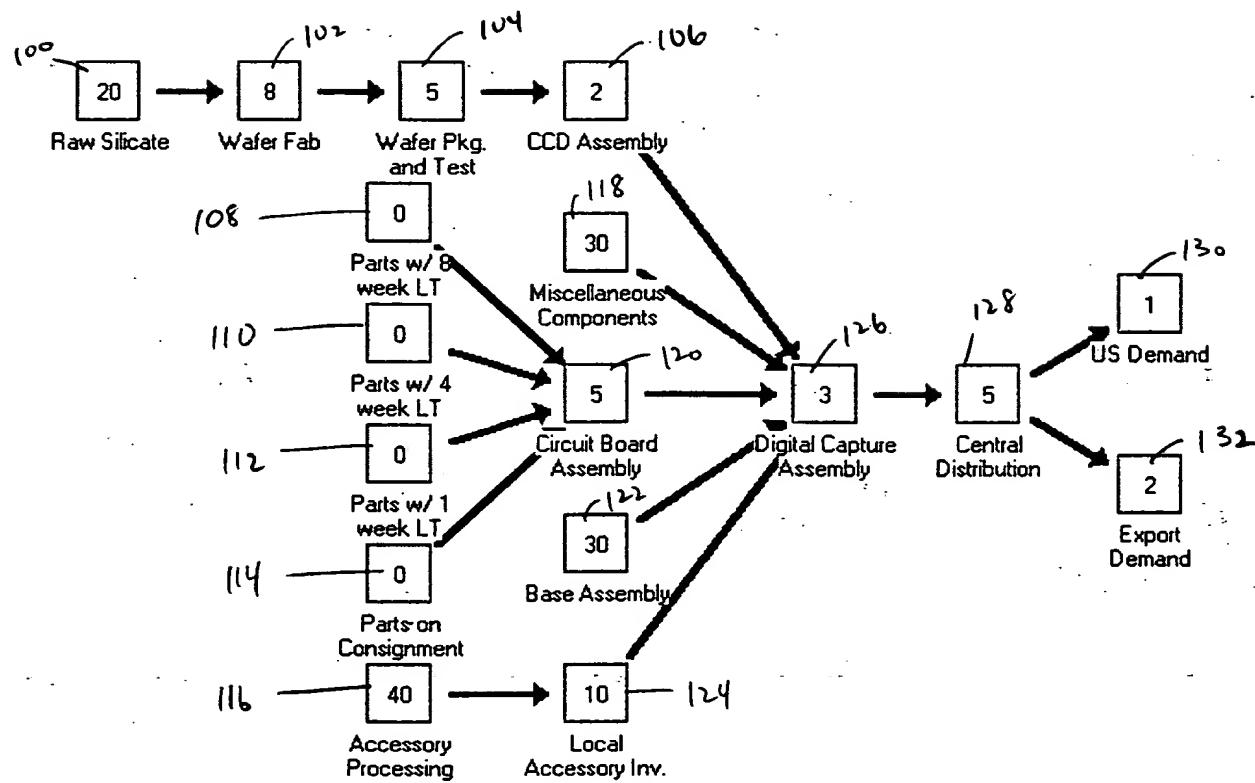


Fig. 13

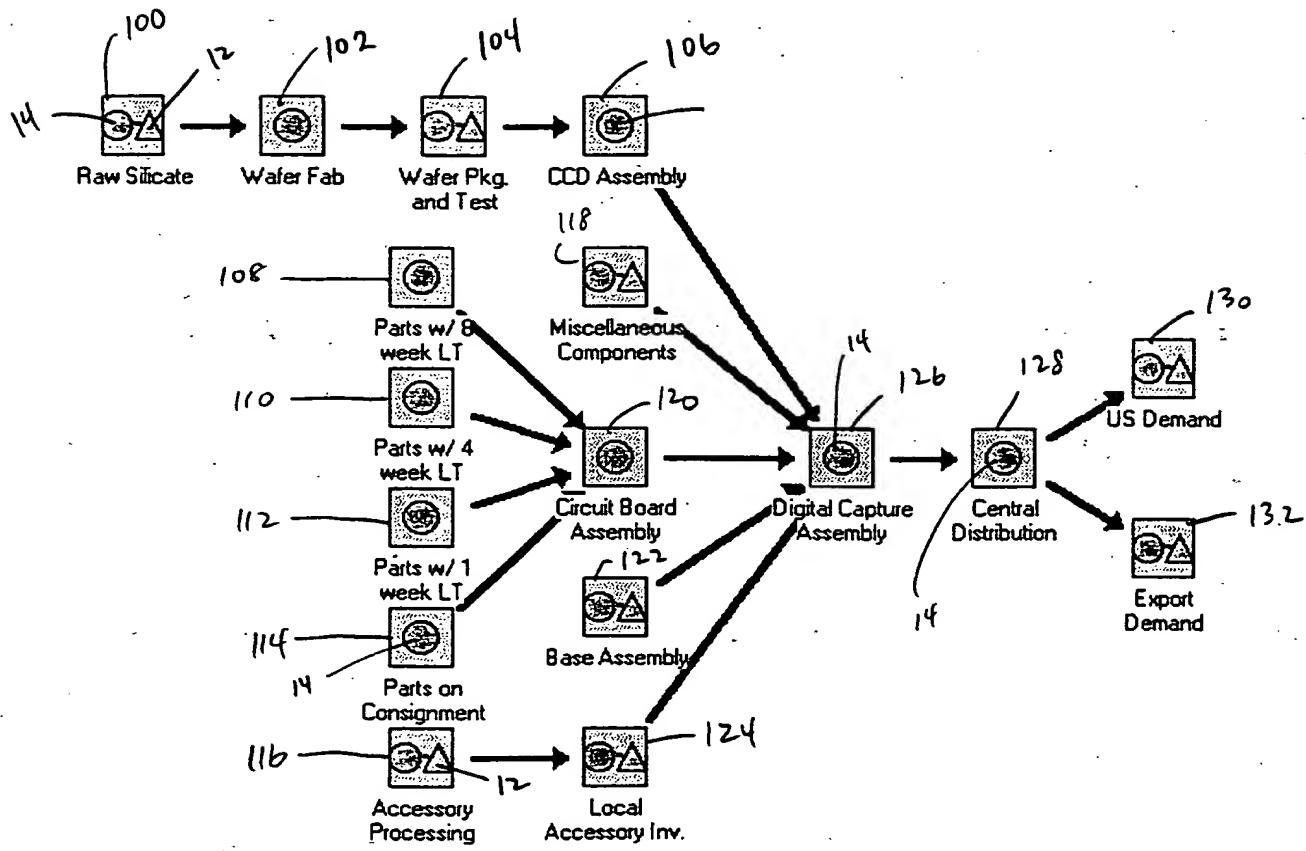


Fig. 14

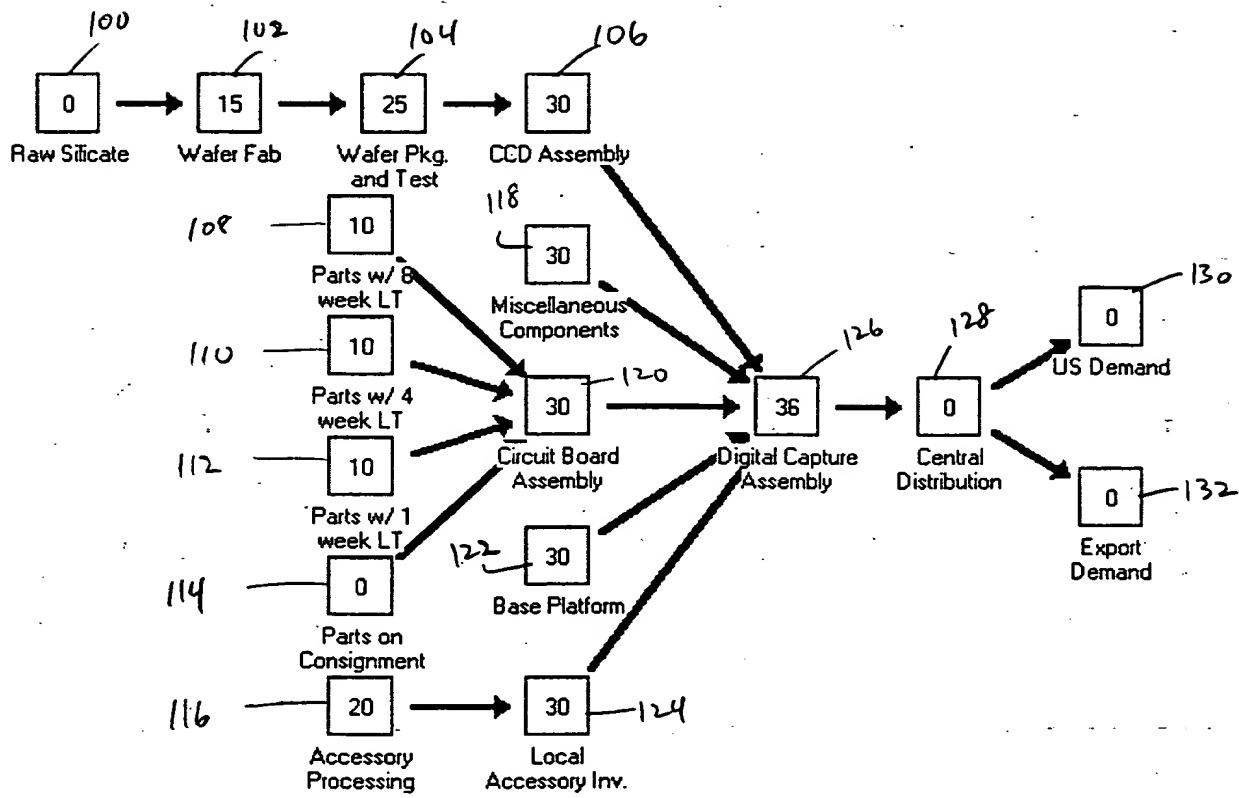


Figure 15

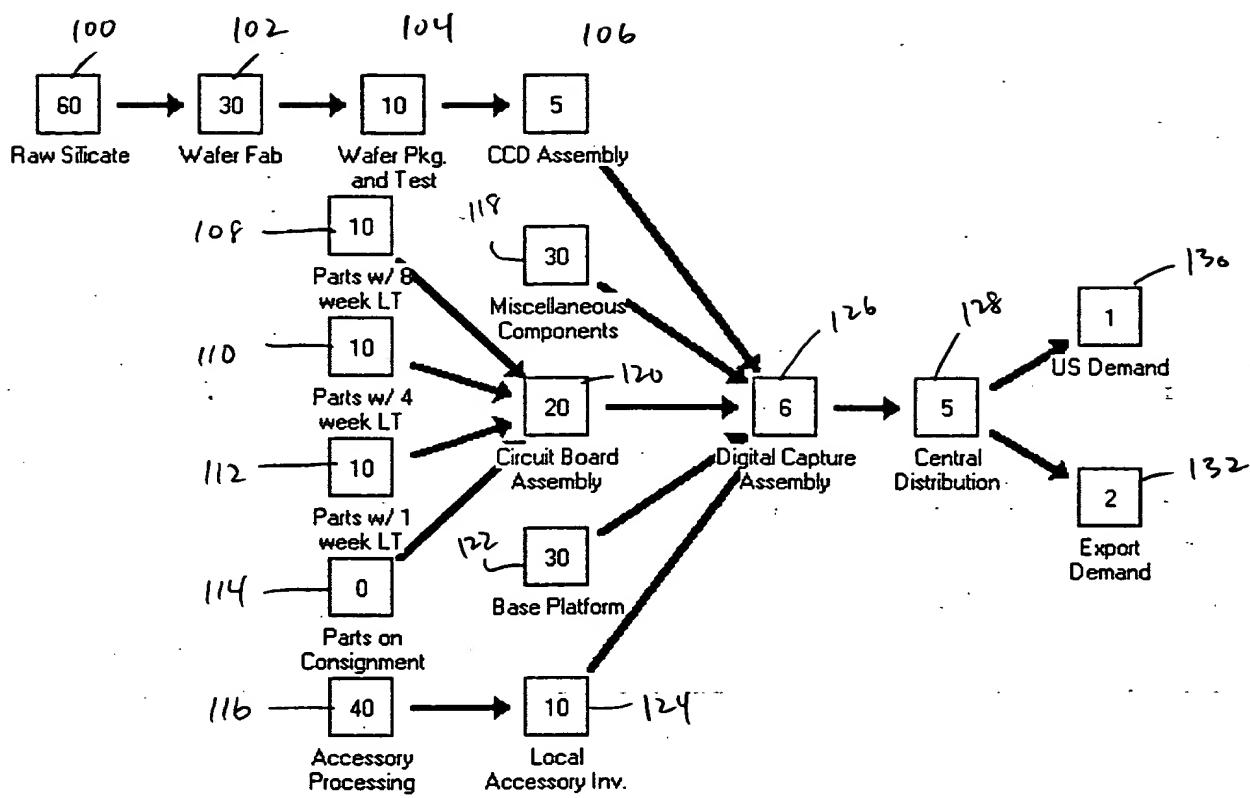


Figure 16

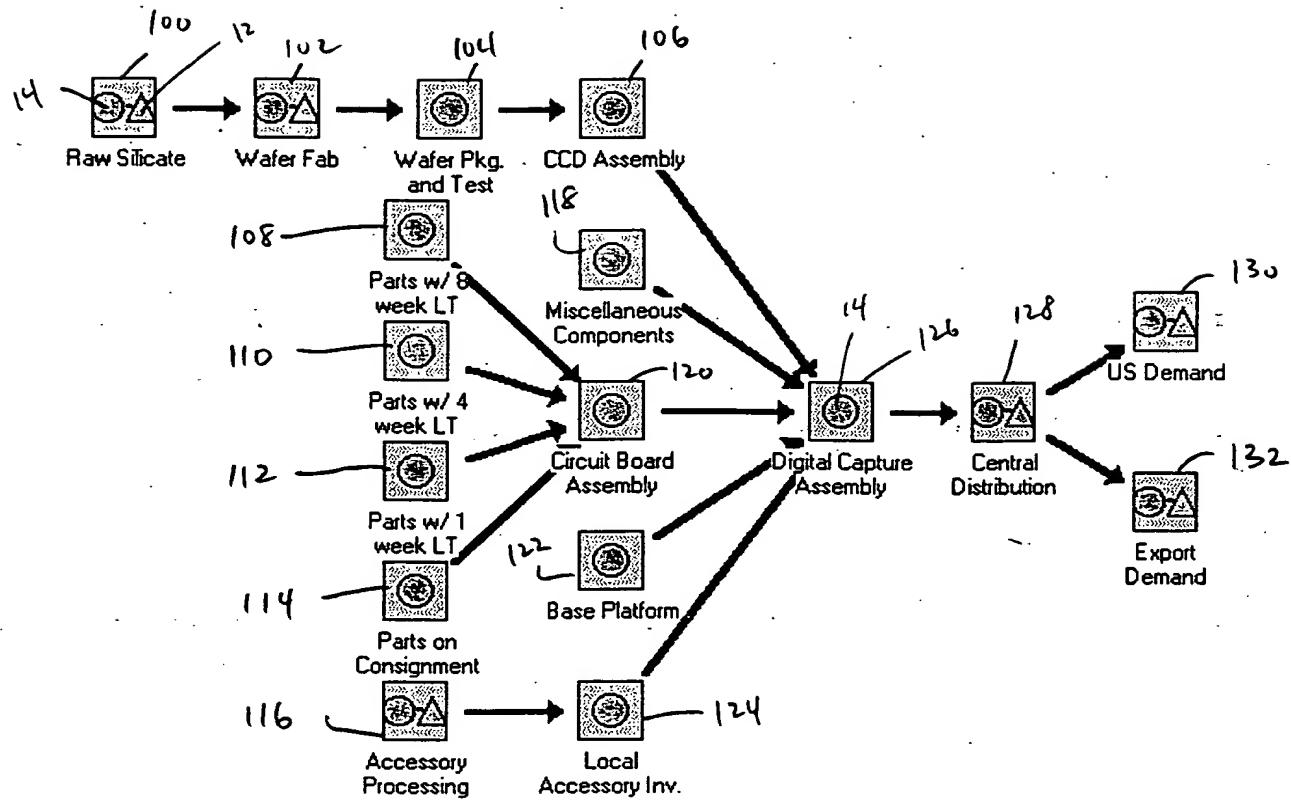


Figure 17

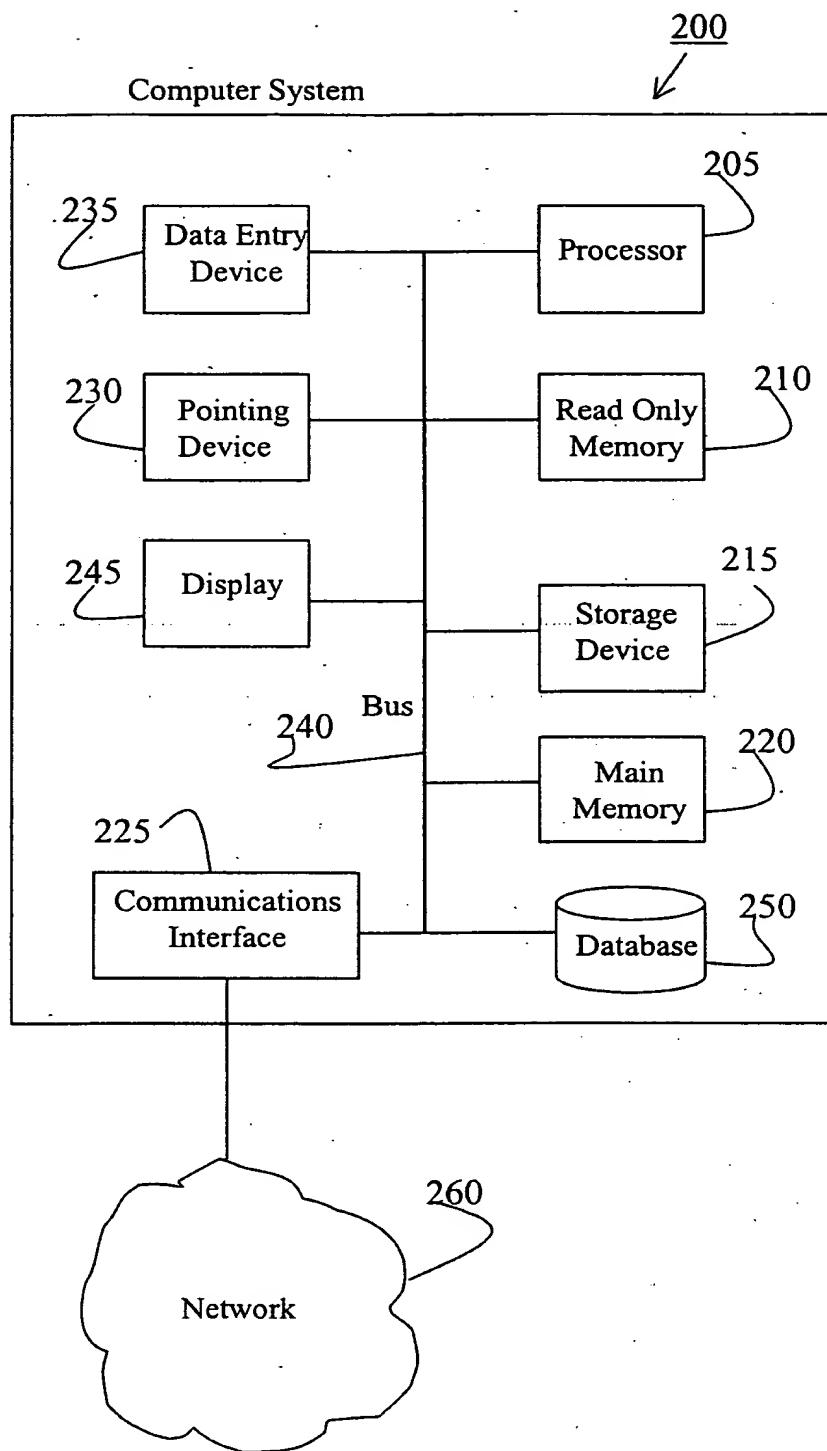
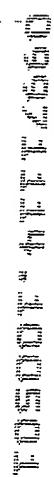


Fig. 18

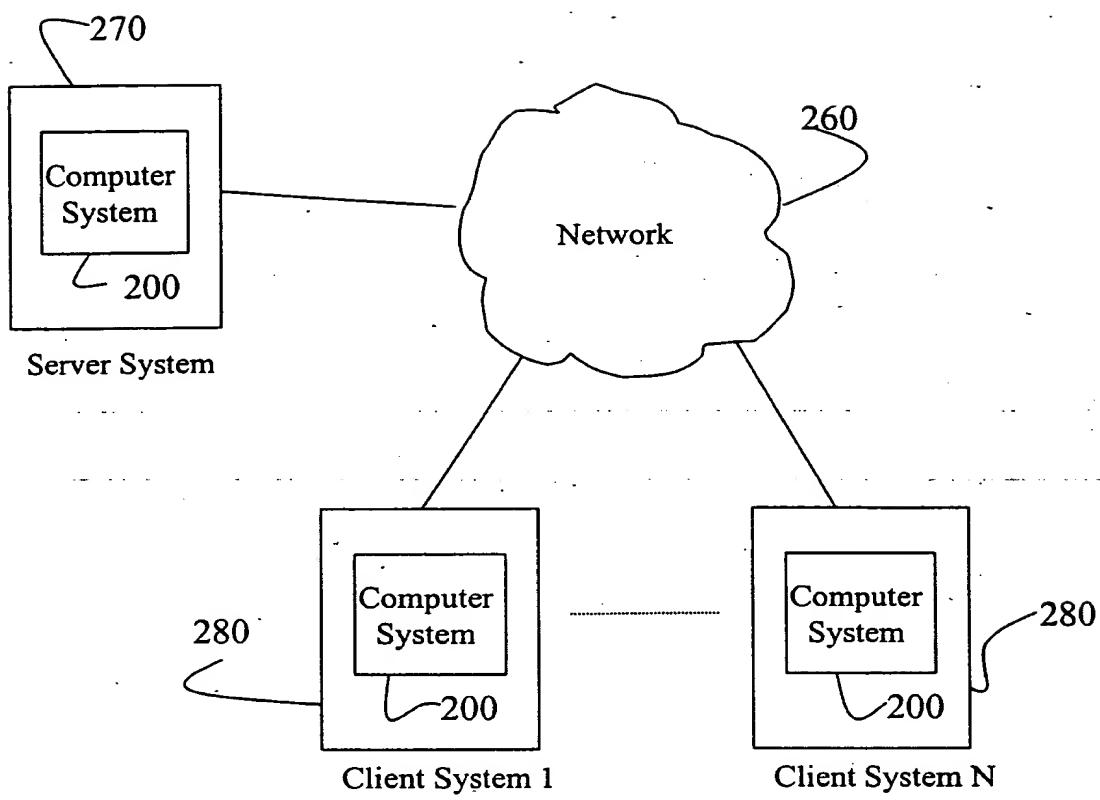


Fig. 19

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Eric Sample

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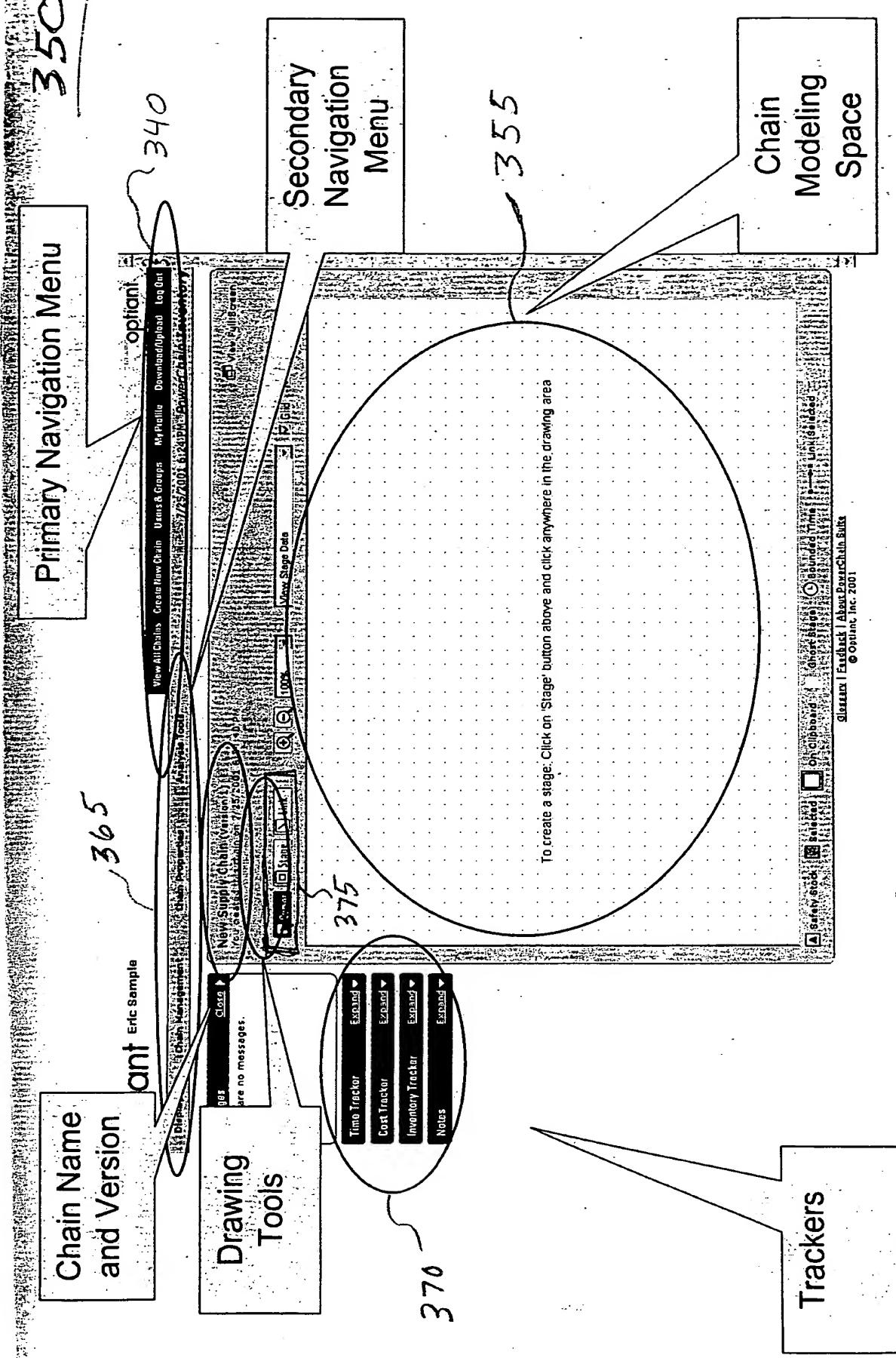
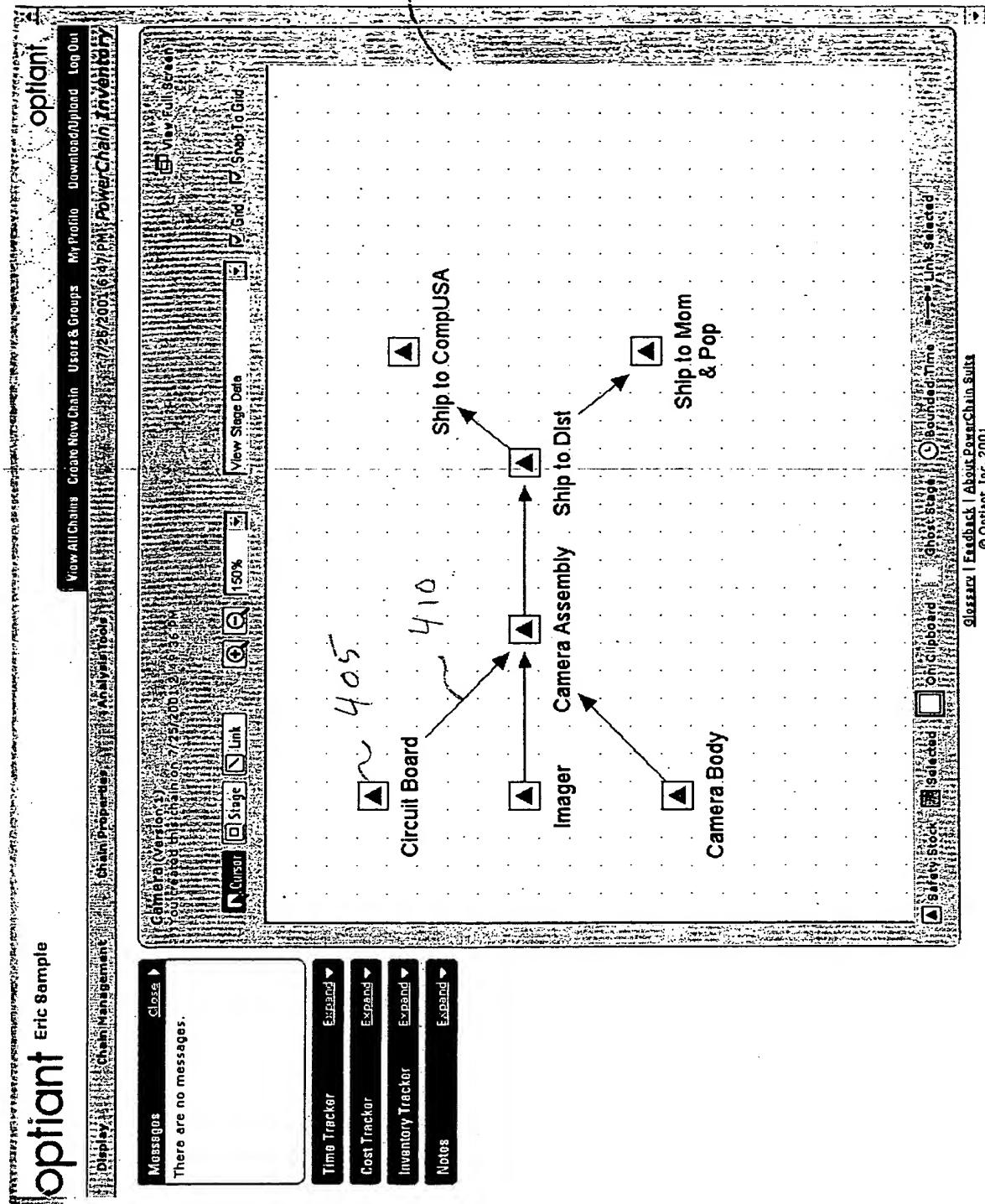


Fig. 21

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Fig. 22

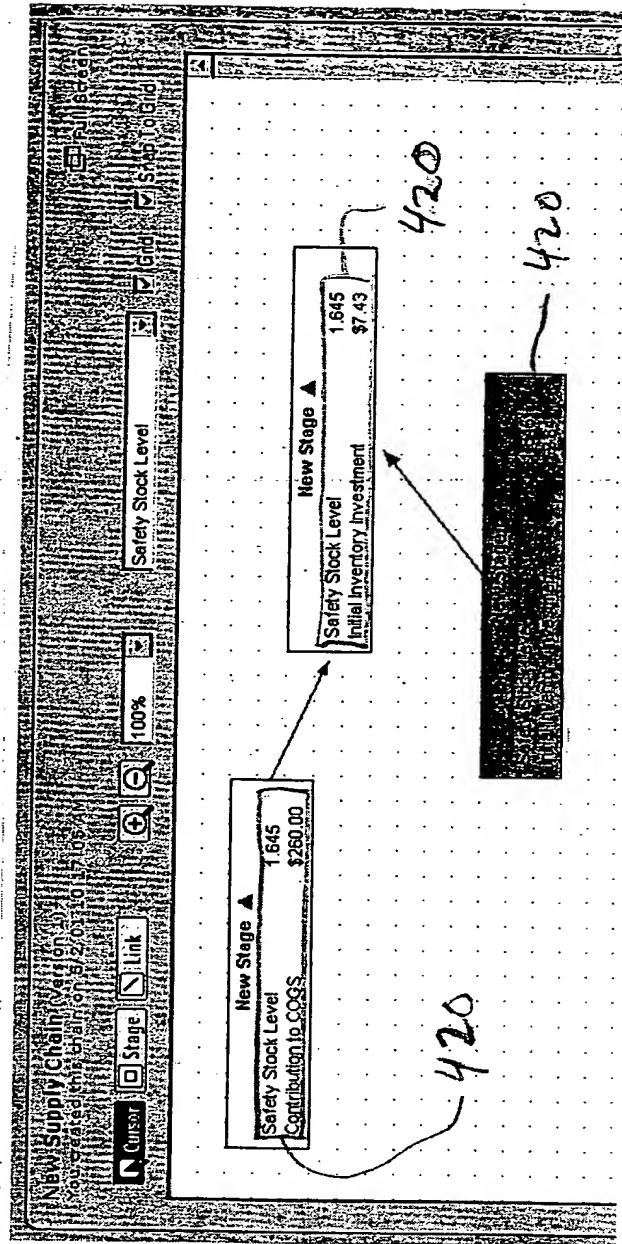


Fig. 23

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Second Computer

First Computer

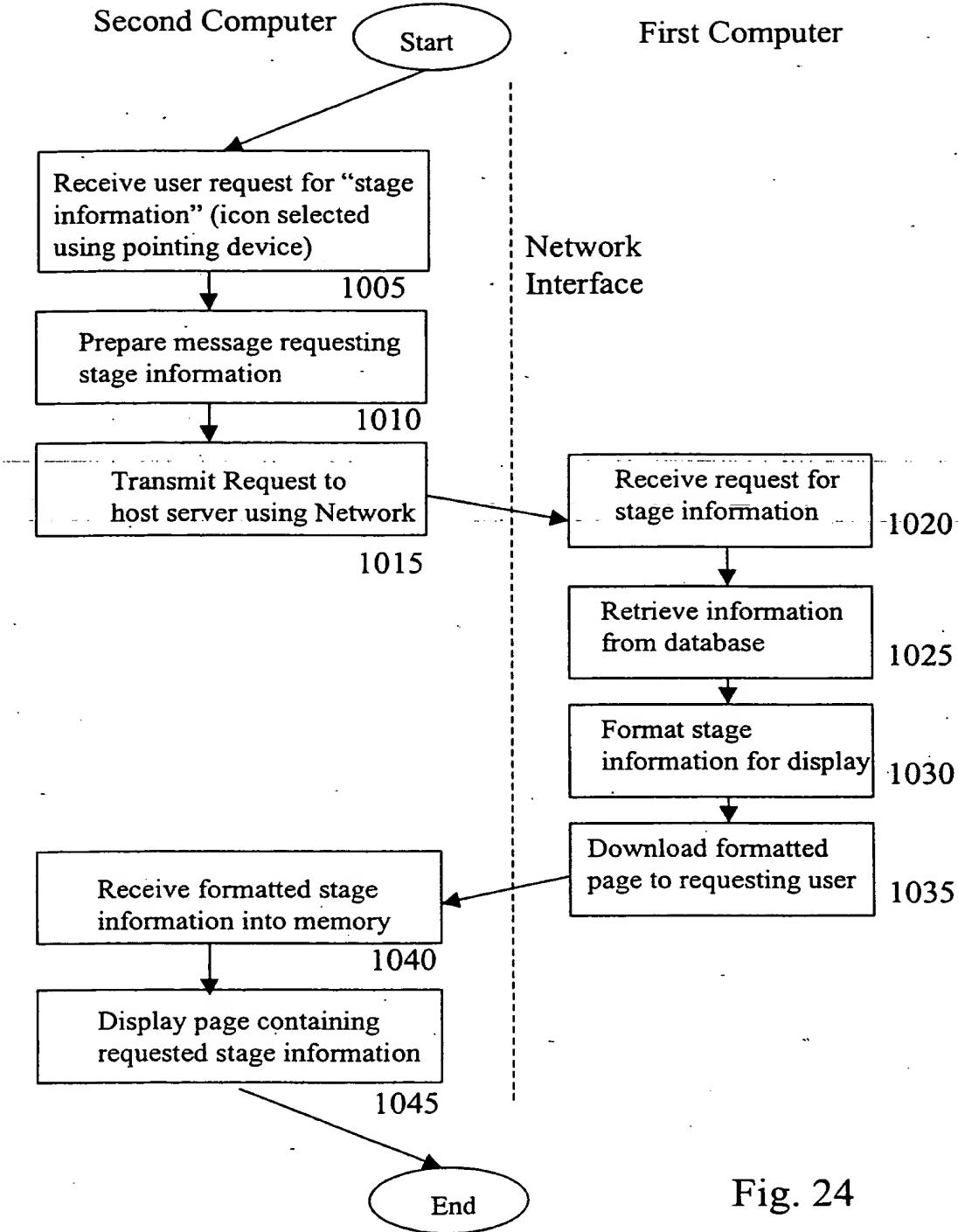


Fig. 24

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Eric Sample

Chain Management Chain Properties

Display

Messages

Respond

View All Chains Create New Chain

7/25/2001 5:14 PM PowerChain Architect

My Profile

Logout

Download/Upload

Analytics Tools

Stage Name ▾

Stage Name	Option Time	Service Time	Option Cost	Class
New Stage	0	0	\$1.00	None Specified
New Stage	1	0	\$1.00	None Specified
New Stage	1	0	\$1.00	None Specified
New Stage	1	0	\$1.00	None Specified

Display | Stage Report

Link Report

- The Stage Report is accessed by going to Display | Stage Report
- The Link Report is accessed by going to Display | Link Report
- Allows rapid entry of stage information and rapid deletion of stages and links respectively

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Fig. 25

Options Summary Tab

600

PowerChain Architect: New Supply Chain - Microsoft Internet Explorer		Stage Name: Distribution		Create/Save	
Options Summary		Options Detail		Stage Properties	
Option Name	Air Ship	Total Option Time (in days)	10	Include in optimization?	<input checked="" type="checkbox"/>
Option Name	New Option	Total Option Cost	\$10	Holding Cost Rate	20%
Option Name		Total Option Cost	\$5	Currently Selected	<input checked="" type="checkbox"/>
Option Name		Total Option Cost	\$5	Details	<input type="button" value="View/Edit"/>
Option Name		Total Option Cost	\$5	Notes/Description:	<input type="text"/>
Option Name		Total Option Cost	\$5	Stage	<input type="button" value="Edit"/>
Option Name		Total Option Cost	\$5	Creation and Last Change Information	<input type="button" value="Add Option"/>
Name of Option	Click to add more options	Total lead time of the option	Total cost of the option		

Optimization
selects the best option

Whether to consider this option during optimization

Click to add more options

Name of Option

Fig. 26

FIGURE 26

Option Report Tag

PowerChain Architect: New Supply Chain - Microsoft Internet Explorer

Stage Name: Distribution

Options Summary Options Detail Option Report Stage Properties

A Stage Report shows a table of all the inputs and calculations for this stage, depending on which report is chosen. Every option gets calculated as if it were the currently selected option.

Options Included in Stage:

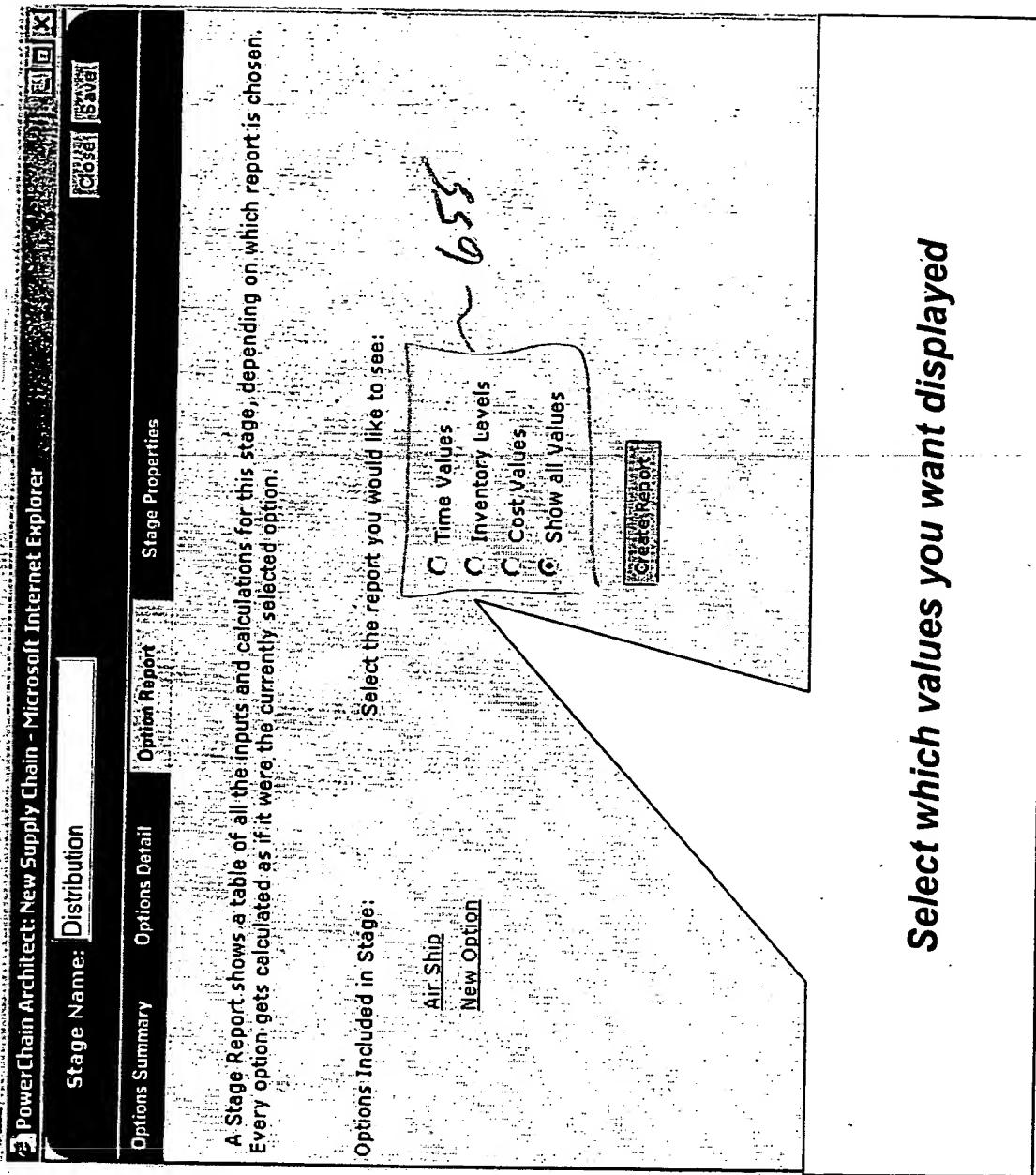
Air Ship
New Option

Select the report you would like to see:

655

Time Values
 Inventory Levels
 Cost Values
 Show all values

Create Report



Select which values you want displayed

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Fig. 27

Stage Properties Summary Tab

Stage Properties Summary Tab	
PowerChain Architect: New Supply Chain - Microsoft Internet Explorer	
Stage Name: Distribution	
Options Summary	
Service Demand	
Summary	
Cumulative Cost	\$1.00
Safety Stock Cost	\$0.33
Pipeline Stock Cost	\$0.20
Total Stock Cost	\$0.53
Total Inventory Investment	\$2.64
Contribution to COGS	\$260.00
Safety Stock Level (in units)	1.64
Pipeline Stock Level (in units)	1.00
Total Stock Level (in units)	2.64
Longest Path Through Stage (in days)	1
Stage Transversal Time (in days)	3
All calculations are based on the currently selected configuration.	
Cost Metrics	Inventory Metrics
Time Metrics	
Metrics	
<input type="checkbox"/> Include Stage in Optimization? <input type="radio"/> Yes <input type="radio"/> No <input type="checkbox"/> Include Stage in Cost Calculations? <input type="radio"/> Yes <input type="radio"/> No <input type="checkbox"/> Include Stage in Time Calculations? <input type="radio"/> Yes <input type="radio"/> No	
Stage Class: None Specified	
View Stage Permissions	
Stage Notes/Description:	

Classify the stage into an echelon

Specify whether the stage affects optimization or calculations

Fig. 28

Stage Properties Demand Tab

PowerChain Architect: New Supply Chain - Microsoft Internet Explorer

Stage Name: **Distribution**

Options Summary Options Detail Option Report

Summary Service **Demand**

Average Demand

Number of days out to show: **20**

View Demand Matrix in Full Screen Mode

Stage Notes/Description:

Uncertainty of Demand

End Customer Service Level

Average Demand

View Demand Matrix

700

Fig. 29

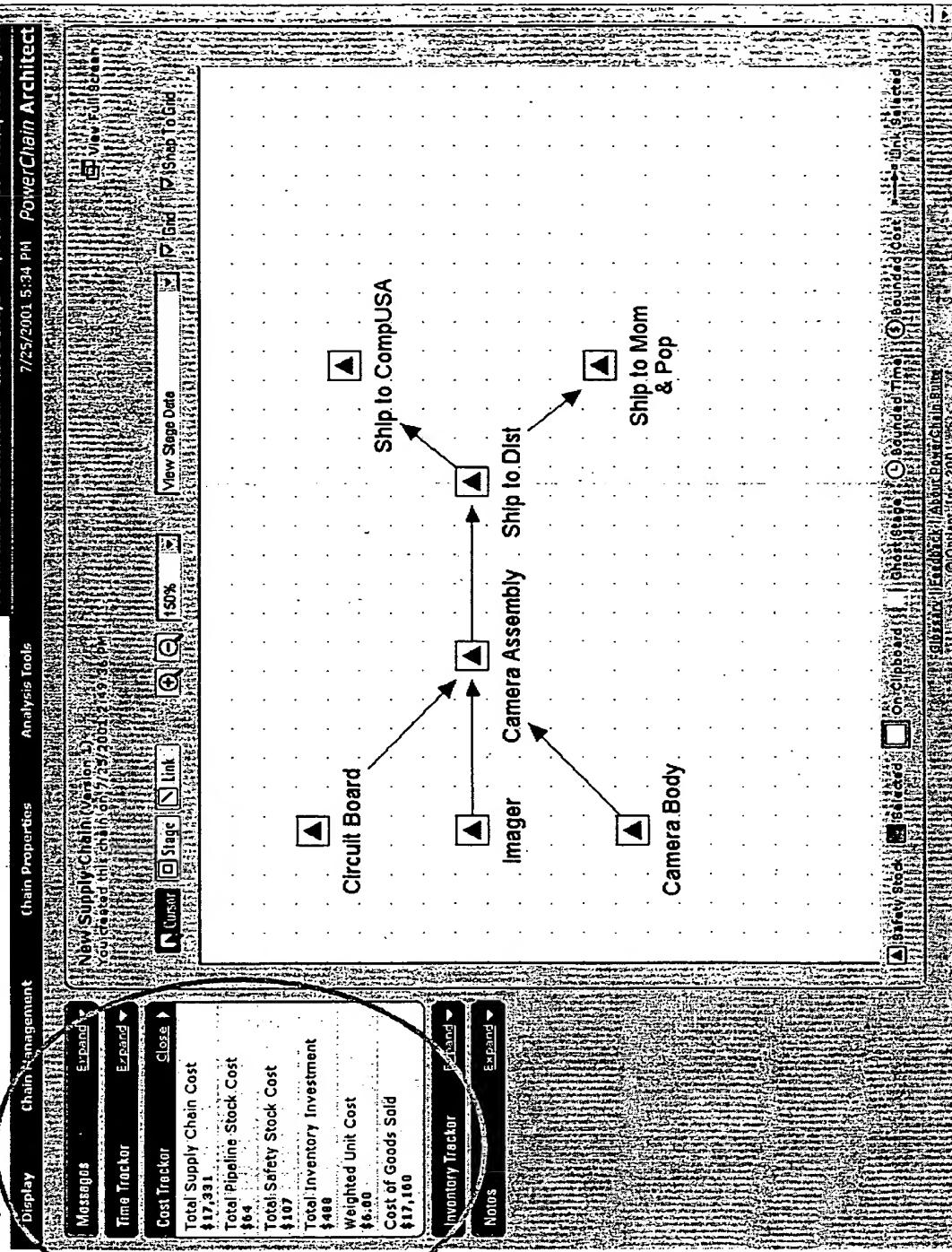
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Demand Matrix Data (Estimated):

Service Level	95%	50%	100%
Power	1	1	1

Cost Tracker

optiant Eric Sample

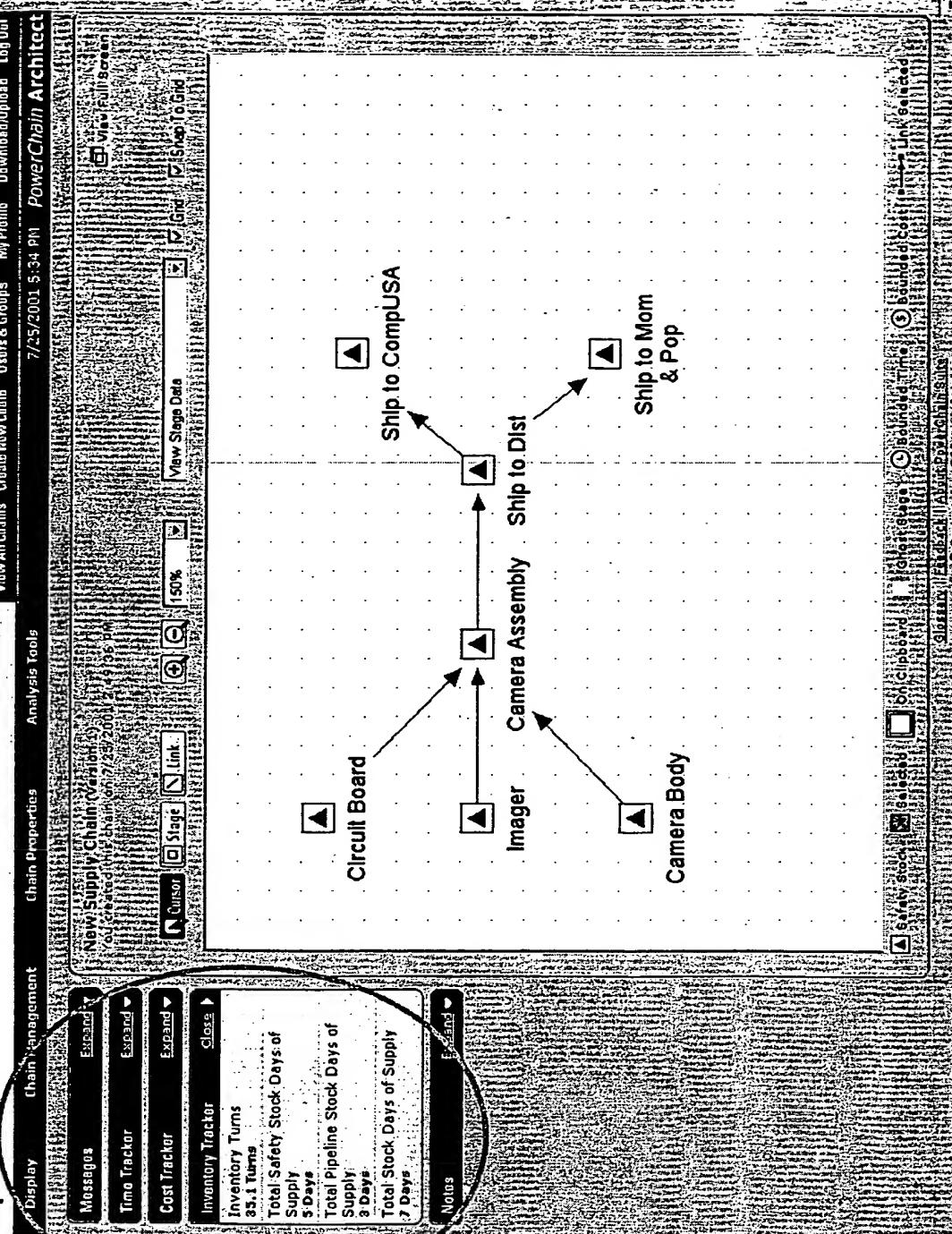


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Fig. 31

Inventory Tracker

optiant Eric Sample



6/20

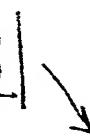
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Fig. 32

optiant Eric Sample

optiant

900



[View All Chains](#) [Create New Chain](#) [Users & Groups](#) [My Profile](#) [Download Options](#) [Log Out](#)

6/26/2001 6:05 PM PowerChain Architect

COMPARE CHAINS

Name	Total Safety Stock Cost	Total Pipeline Stock Cost	Total Stock Cost	Total Cost of goods sold	Total Supply	Weighted Inventory Investment	Total Stock Level	Total Safety Stock	Total Cost	Base Inventory Turns	Horizon Time Unit	Time Unit	Time of Stages
Copy of PowerChain Architect Case Study	\$164,005.14	\$594,801.88	\$758,606.82	\$2,427,674.61	\$7,872,712.00	\$18,631,318.82	\$3,617,986.41	410.87	\$7,36	120 day	17	17	
PowerChain Architect Case Study	\$137,511.21	\$427,612.86	\$565,122.07	\$1,921,746.91	\$7,846,012.00	\$18,413,136.07	\$3,612,964.02	310.30	929	113 day	16	16	

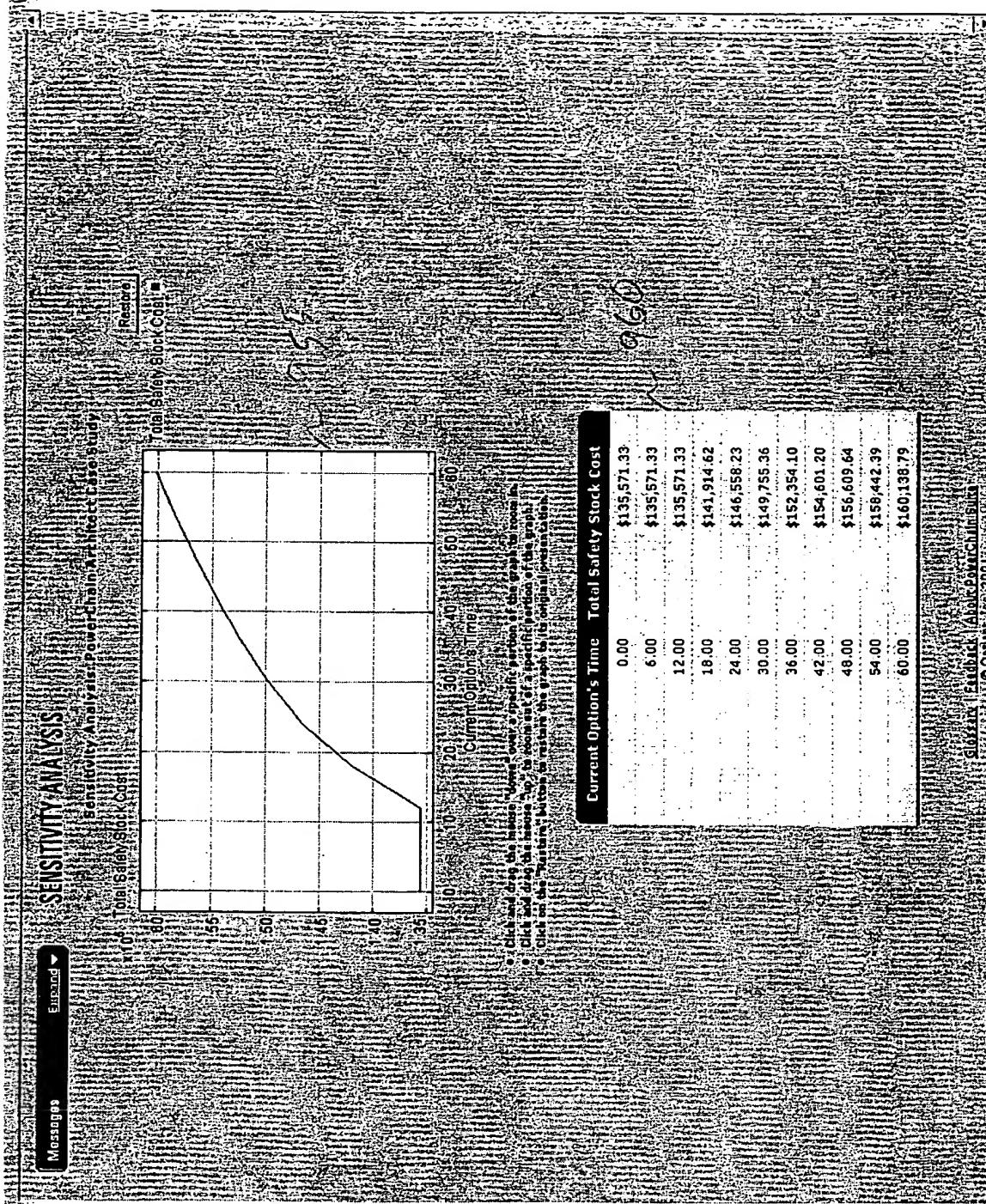
OPTIANT ENTERPRISE ARCHITECT
Version 2.0

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Fig. 33

950

Fig. 34



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1100

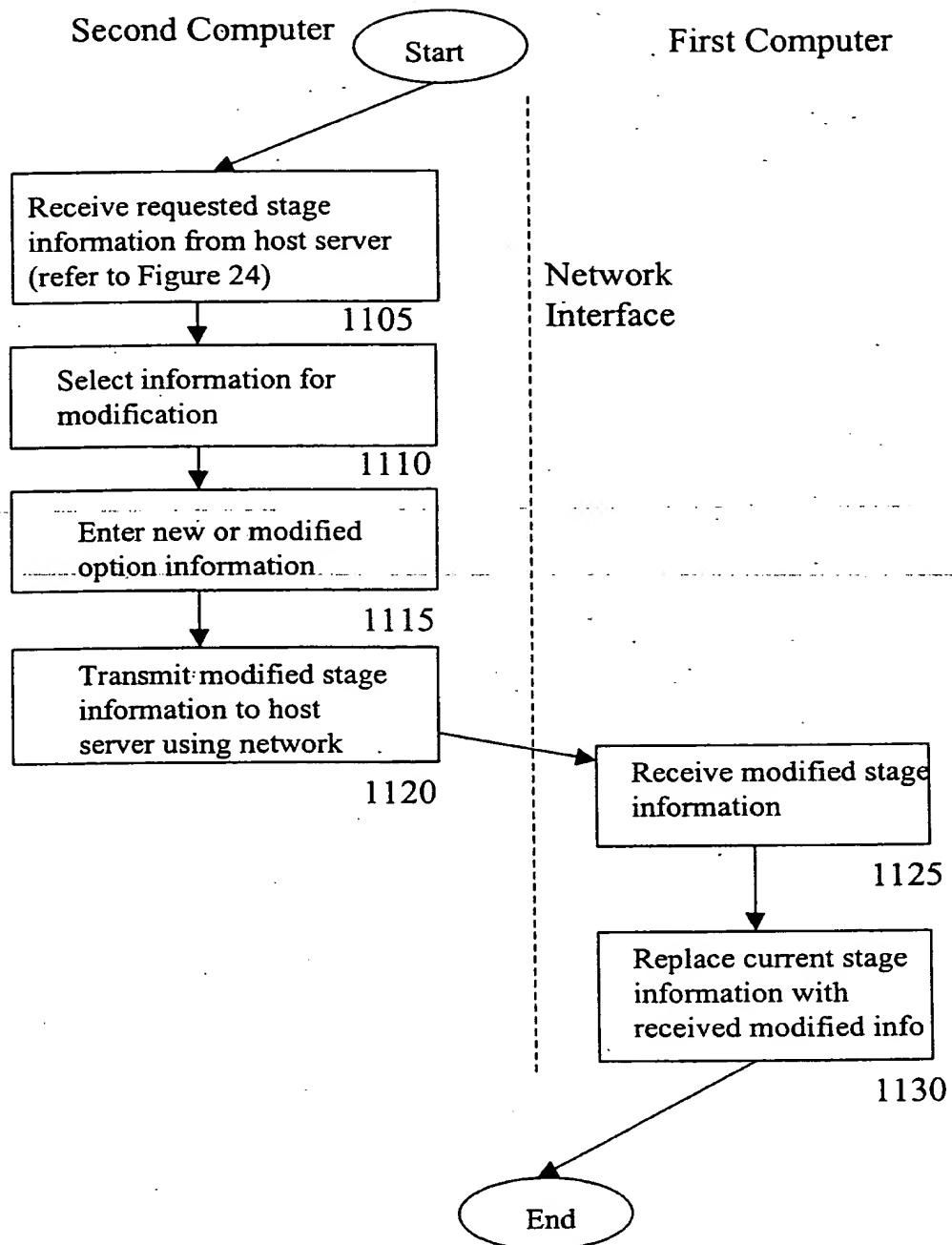


Fig. 35

1200

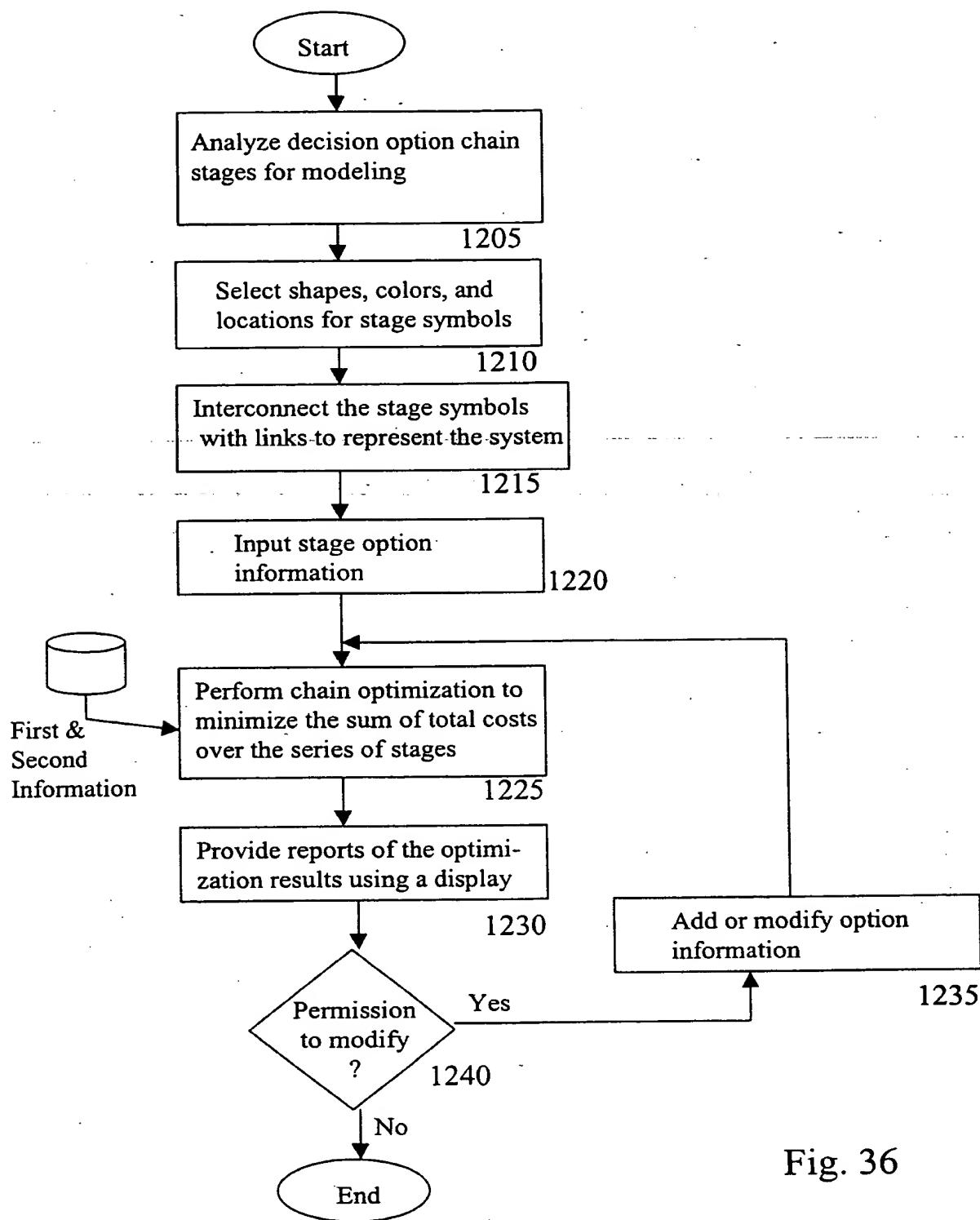


Fig. 36

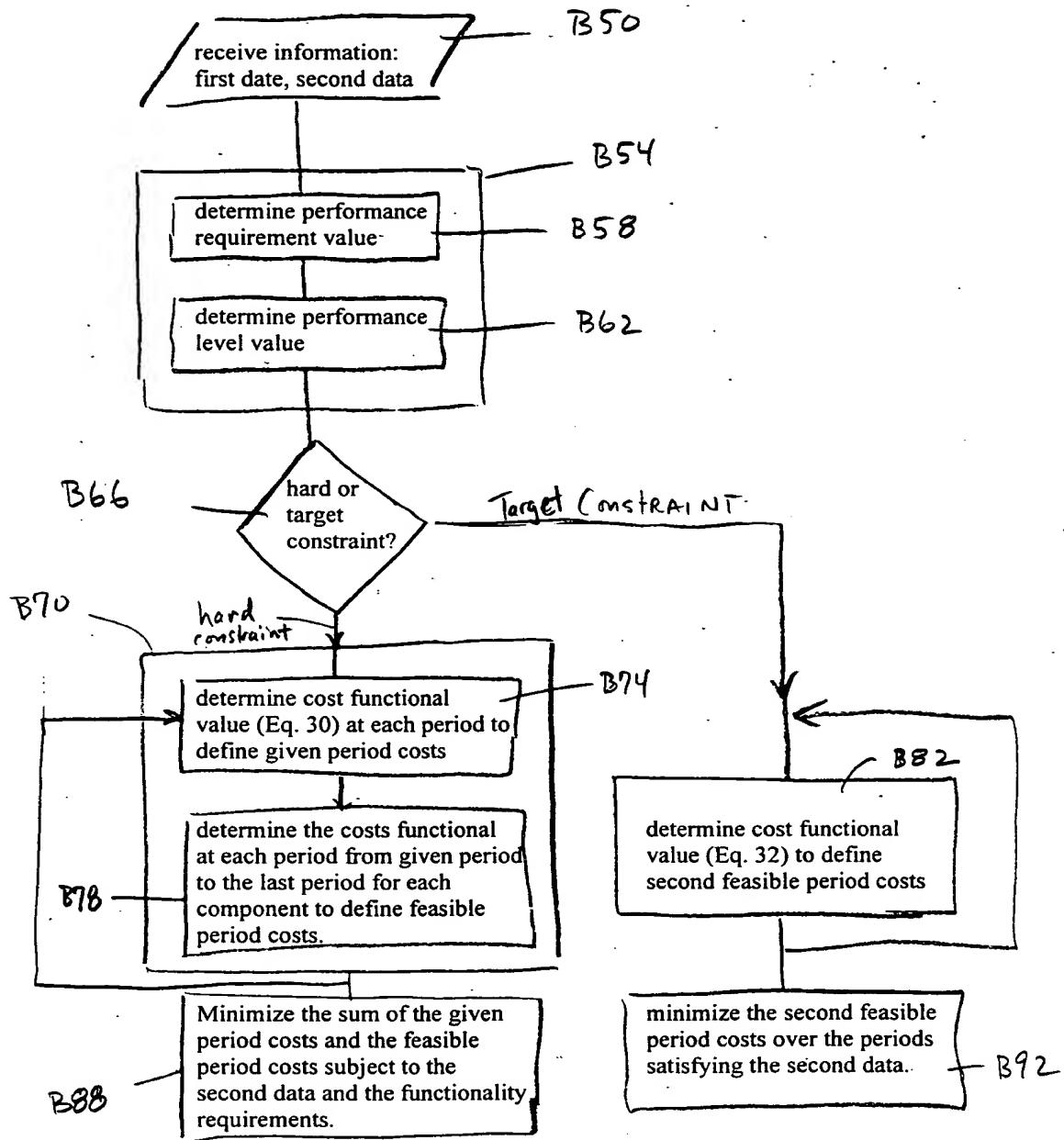


Figure 37

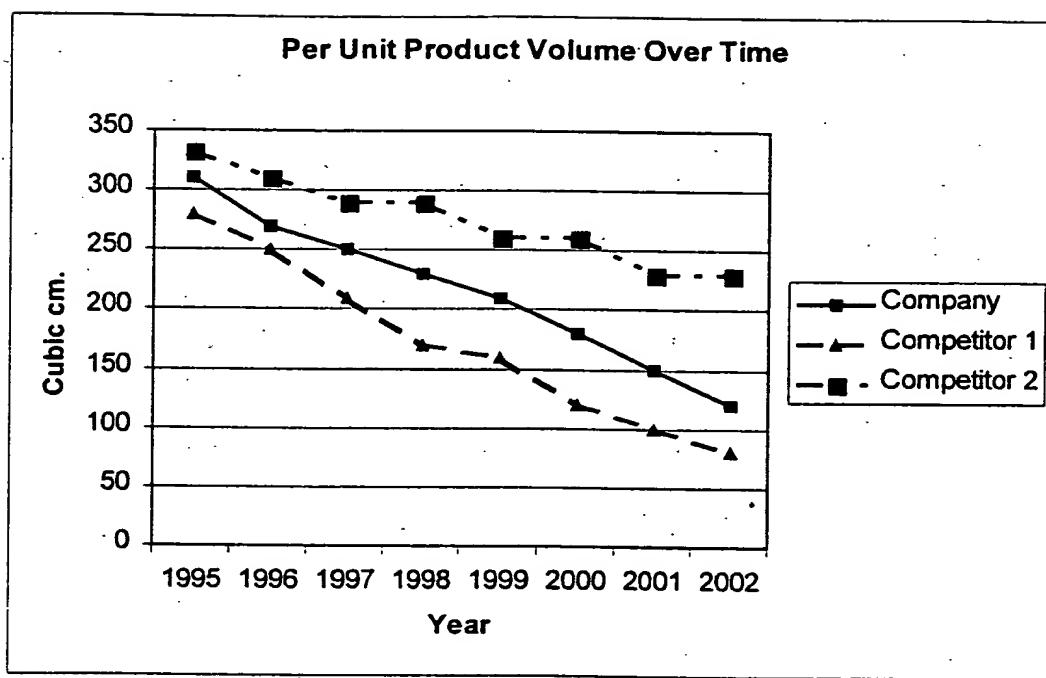
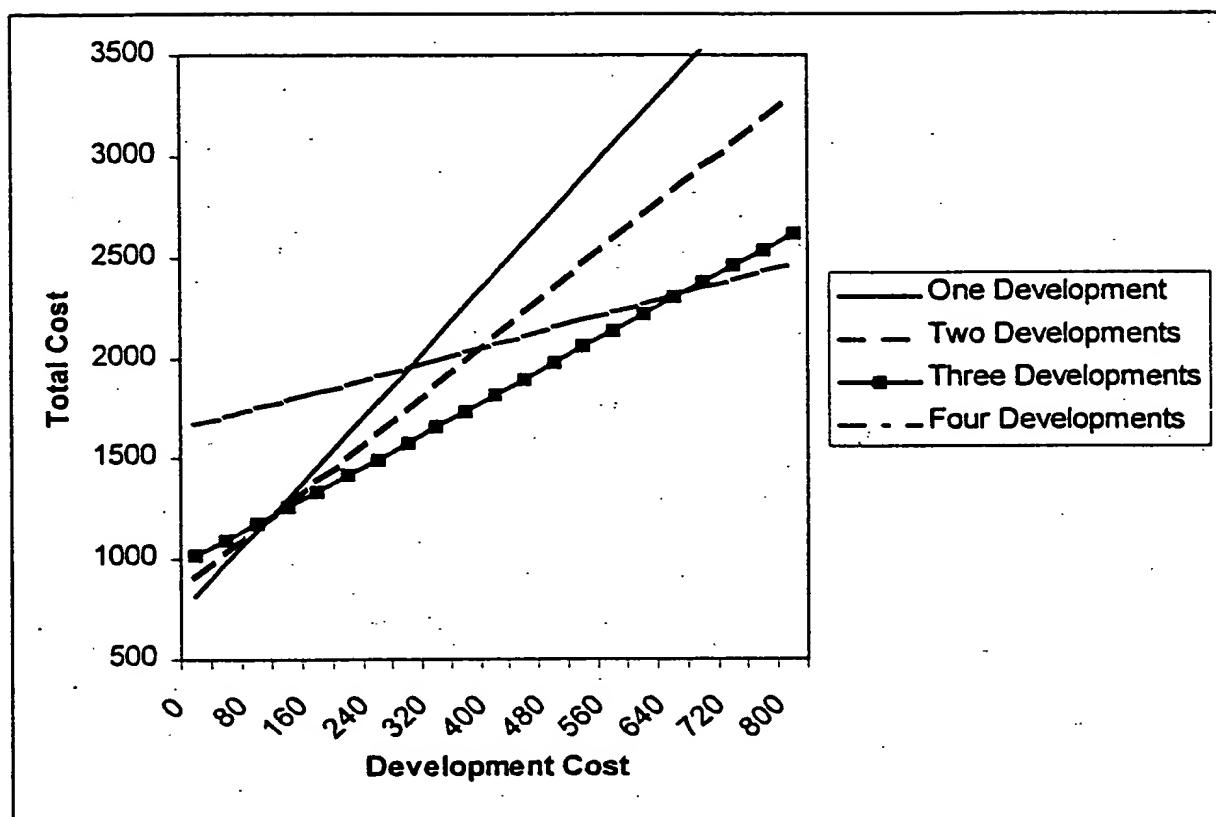


Fig. 38 Chart showing product volumes over time



Graphical Depiction of Efficient Frontier

Fig. 39: